

Appl. No. 09/031,463  
Atty. Doctel No. 7943M  
Ampl. Dated January 23, 2004  
Reply to First Office Action Dated December 3, 2003  
Customer Number 27752

### AMENDMENTS

#### In the Claims

The amendments to the claims herein are made without prejudice.

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Currently amended) A chewing gum composition comprising:
  - a. from about 0.1% to about 50% of a polymeric surface active agent;
  - b. up to about 10% of water; and
  - c. from about 40% to about 99% of carrier materials.wherein said polymeric surface active agent provides surface conditioning effects on a subject's teeth and mucosal surfaces including (a) increased hydrophilic surface on teeth and a hydrophobic surface on the mucosa as measured by changed water contact angles, (b) increased total surface energy of teeth, (c) increased Lewis base score and (d) desorption of adsorbed pellicle proteins, thereby conferring improved intraoral cleaning and smooth tooth feel impression.
7. (Original) The chewing gum composition according to Claim 6 wherein the chewing gum has an outer coating.
8. (Original) The chewing gum composition according to Claim 6 where the chewing gum further comprises a cationic material.
9. (Original) The chewing gum composition according to Claim 8 wherein the cationic material controls the release rate of the polymeric surface active agent.
10. (Original) The chewing gum composition according to Claim 8 wherein the cationic material is calcium.
11. (Original) The chewing gum composition according to Claim 6 wherein the polymeric surface active agent is a glassy polyphosphate.
12. (Currently amended) The chewing gum composition according to Claim 11 wherein the glassy polyphosphate is Glass-H has an average chain length of about 21.

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13. (*Currently amended*) The chewing gum composition according to Claim 6 wherein the chewing gum further comprises an orally active astringency-conferring metallic ion.
14. (*Currently amended*) The chewing gum composition according to Claim 13 wherein the astringency of the chewing gum is reduced by the polymeric surface active agent.
15. (*Original*) The chewing gum composition according to Claim 14 wherein the efficacy of the orally active metallic ion is not significantly reduced by the polymeric surface active agent.
16. (*Currently Amended*) A method of reducing astringency of a chewing gum composition containing an orally active metallic ion comprising administering to the subject the chewing gum comprising:
- a. from about 0.1% to about 50% of a polymeric surface active agent;
  - b. from about 0.01% to about 10% of an orally active astringency-conferring metallic ion;
  - c. up to about 10% of water; and
  - d. from about 30% to about 99% of carrier materials;
- wherein the efficacy of the orally active metallic ion is not significantly reduced by the polymeric surface active agent.
17. (*Currently amended*) A chewing gum comprising:
- (a) from about 0.1% to about 50% of a particulate polyphosphate that provides surface conditioning effects and a crunchy texture, wherein the particulate polyphosphate:
    - (i) has a particle size such that it passes through a 2mm mesh and is retained by a 0.1mm;
    - (ii) has an aqueous solubility of at least 5g per 100ml at 25°C;
  - (b) greater than about 10% gum base comprising one or more elastomers, resins or waxes and mixtures thereof.

18-25. (*Previously cancelled*)

26. (*Previously presented*) A composition according to Claim 17 which comprises from about 0.5% to about 30%, by weight, of particulate polyphosphate.

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27. *(Previously presented)* A composition according to Claim 17 which comprises from about 1% to about 15%, by weight, of particulate polyphosphate.
28. *(Previously presented)* A composition according to Claim 17 which comprises from about 5% to about 12%, by weight, of particulate polyphosphate.
29. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it passes through a 1mm mesh.
30. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it passes through a 0.8mm mesh.
31. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it passes through 0.5mm mesh.
32. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it passes through a 0.4mm mesh.
33. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it is retained by a 0.112mm mesh.
34. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it is retained by a 0.16mm mesh.
35. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it is retained by a 0.18mm mesh.
36. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a particle size such that it is retained by a 0.2mm mesh.

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37. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate is sodium polyphosphate with an average chain length of from about 10 to about 30.
38. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate is sodium polyphosphate with an average chain length of from about 15 to 25.
39. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate is sodium polyphosphate with an average chain length of from about 21 to about 23.
40. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has an aqueous solubility of at least about 8g per 100ml at 25°C.
41. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has an aqueous solubility of at least about 10g per 100ml at 25°C.
42. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has an aqueous solubility of at least about 15g per 100ml at 25°C.
43. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a hardness of greater than 1 when measured using the Mohs hardness scale.
44. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate has a hardness of 2 or greater when measured using the Mohs hardness scale.
45. *(Previously presented)* A composition according to Claim 17 wherein the particulate polyphosphate is dispersed throughout the chewing gum composition.
46. *(Previously presented)* A composition according to Claim 17 wherein the weight ratio of gum to particulate polyphosphate is in the range from about 10:1 to about 1:10.

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47. *(Previously presented)* A composition according to Claim 17 wherein the weight ratio of gum to particulate polyphosphate is in the range from about 5:1 to about 1:5.
48. *(Previously presented)* A composition according to Claim 17 wherein the weight ratio of gum to particulate polyphosphate is in the range from about 5:1 to about 1:1.
49. *(New)* A method of providing surface conditioning effects to a subject's teeth and oral mucosa comprising administering to the subject a chewing gum composition according to Claim 6.
50. *(New)* A method of providing surface conditioning effects to a subject's teeth and oral mucosa comprising administering to the subject a chewing gum composition according to Claim 17.